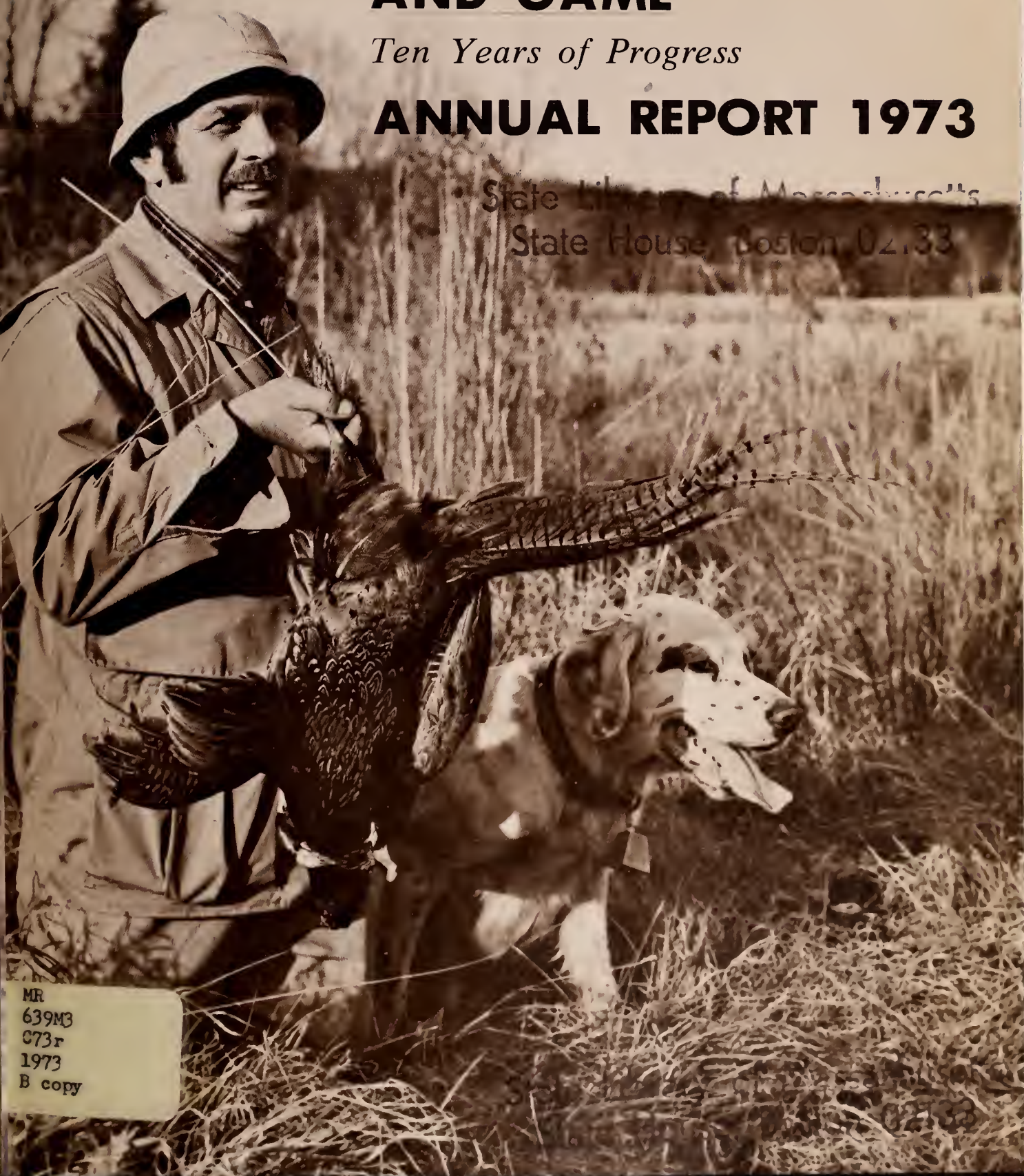


MASSACHUSETTS DIVISION OF FISHERIES AND GAME

Ten Years of Progress

ANNUAL REPORT 1973

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FRANCIS W. SARGENT



Director
JAMES M. SHEPARD

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COMMONWEALTH OF MASSACHUSETTS

Division of Fisheries and Game 108th Annual Report

His Excellency, Francis W. Sargent, Governor of the Commonwealth, the Executive Council, the General Court and the Board of Fisheries and Game:

Gentlemen:

I have the honor to submit herewith the one hundred and eighth annual report of the Division of Fisheries and Game, covering the fiscal year from July 1, 1972 to June 30, 1973.

James M. Shepard, Director

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Ten Years of Progress: More than any ten-year period in the Fish and Game Division's history, the decade since 1963 has seen drastic change both in our overall program and philosophy. During this period fish and wildlife management has evolved to established science. Much hypothesis has crystalized into time-tested theory. As rapid and dramatic as the change has been, we are only just beginning to accelerate, just scratching the surface of a vast potential for fish and wildlife restoration. Most encouraging of all — more so even than the technical advances — has been the sudden development among the general public of an environmental conscience; the "Land Ethic" that Aldo Leopold could only dream about has at last begun to surface in our society as a reality. This new philosophy is readily apparent inside the Fish and Game Division and in those who are served by the Division. At last we are coming to realize that hunting and fishing — like all outdoor recreation — is synonymous with a healthy environment. More and more, as is evidenced by our land acquisition program, the Division is concerning itself with not just fish and wildlife but the foundation on which these resources rest. Today that foundation is crumbling everywhere, but if conservationists can keep the pace they have set for themselves over the last decade, there is much hope for the future.

Cover photo by Jack Swedberg

THE COVER: A plump ringneck was not the important thing collected this morning; a memory was.

1973
1973
1973

In describing progress in annual reports there is a tendency to gloss over the many trials and tribulations that inevitably take place in any progressive program. Certainly the Division went through some trying times in the years 1963 to 1973. There was inflation, ever-present budget restrictions, unrest among sportsmen over deer management and conflict over the Division's efforts to establish a modern stream-stocking policy.

Nevertheless, the Division has emerged from this ten-year period in generally fine shape and with a dramatic record of accomplishment.

Two board members have served the Division for nearly the full period. To these two men — Harry Darling (12-3-62 to 10-6-72) and Martin Burns (11-27-63 to 10-6-73) we dedicate the 1973 Annual Report.

Harry Darling was at the helm of the Board for six years during the ten years. He took over for Roger Williams who left the state for business reasons. Darling graciously made the motion to re-elect Roger Williams Board Chairman when Williams returned to Massachusetts in October of 1970. Williams' first term as Chairman had been from 1961 to 1965, his second from 1970 until the present.

Darling's devotion to the principles of a non-partisan Fish and Game Board goes back to 1948 when he helped lay the groundwork for legislation that established the Board system.

The Board

The Fish and Game Board was established in 1948, and has since proven to be a stable and workable system of government. During the last ten years 11 men have served on the Fish and Game Board. The five present members have averaged five years each for a total of 25 years. The present Director, James M. Shepard, has served for the last nine years and has had a chance to cement a professional working relationship with the Board. This situation has permitted the evolution of well-coordinated leadership with the added strengths of continuity and experience.

In 1963 Fish and Game income was about \$1.3 million — surplus about \$.25 million. In 1973 annual income had doubled — surplus close to \$.5 million.

Yet the demand for services has outstripped the increase in revenue. The Division made a plea for funding help based on a study which indicated that sportsmen contribute more than \$110 million to the economy of the state. There is an additional \$1 million contributed in state excise taxes and \$1.5

Ten Years of Progress



One of the many large abandoned farms purchased by the Division with sportsmen's funds. While providing top-notch hunting, the land is also used for other forms of recreation. In five years after the \$1 license increase the Division bought 10,000 acres at an average cost of \$150 per acre.

million for licenses. While the passage of a \$5 million bond issue aimed at wetland purchase and protection indicates that increasingly the Legislature is responding to these figures and is aware that the Fish and Game Division is the most efficient land-purchasing agent, much more is needed.

The Fish and Game Division has made a tremendous contribution to hunter safety throughout the nation by developing the color "hunter orange". Hunter orange shows up in the woods like a warning beacon yet does not frighten most animals.

The Boston office's move to the new State Office Building was certainly a highlight of the 60's.

The establishment in 1971 of the Fish and Wildlife Museum by Director Shepard and Mike Beatrice will provide a sense of history for future conservationists.

The Division has endeavored to educate youngsters as to proper hunting techniques and gun safety. An important beginning has been the Youth Upland Hunt.

Land Acquisition

Unquestionably the greatest accomplishment in the last 10 years has been in the field of land



In 1963 the Middlesex County League of Sportsmen's Clubs purchased a large tract of land on the Squannacook River and gave it to the Fish and Game Division as an example to other organizations. The dedication took place in 1966, the same year that the \$1 license increase for land went into effect. Left is Dick Cronin, then Northeast District Manager. Right, Jack Dixon, Northeast Fisheries Manager.

acquisition. A dozen important parcels were given to the Division by sportsmens clubs, county leagues and public spirited citizens.

Prior to 1963 Fish and Game controlled 19 wildlife management areas which totaled 24,500 acres. Of these the Division owned seven. The other 12 were leased or used with some form of agreement in cooperation with other state and federal agencies.

In 1964 the Board authorized a realty section. A \$1 increase in license fees went into effect in 1966. The increase in revenue was used for land acquisition. The same year the Division added an engineer to its staff.

The Information and Education Section along with key staff members took on the biggest selling job in Division history when it publicized the need for the proposed \$5 million bond issue for wetland acquisition. Two years of hard work resulted in success.

Since 1963 the Division has purchased for public use approximately 13,000 acres for about \$2.5 million. The agency now owns and/or controls 43,000 acres, with many acres being added all the time.

Wildlife

It has also been a productive 10 years for wildlife management. Labor saving devices in other game farms permitted one game farm to be closed and sold. Today there are twice as many male

pheasants raised with less expense than there were in 1963. This has resulted in part from a breakthrough in sex linkage developed by the Massachusetts Division of Fisheries and Game. The technique allows culturists to differentiate between male and female pheasants immediately after hatching instead of the former six- to seven-week period.

The Division managed 19 wildlife management areas in 1963. Today it manages 35. These areas are used by the public for all types of recreation — not just hunting and fishing.

Wild turkey populations have been re-established in suitable range throughout the state. The flocks are small, but at last showing signs of growing. Problems with domestic genes have hampered us in the past but, our biologists are aware of the problem and the situation at last appears to be under control.

Introduction of game birds in vacuum habitat has taken place — sharp-tailed grouse for Nantucket, ruffed grouse for Martha's Vineyard, Canada geese for western Massachusetts.

Fisheries

Great progress has been realized in fisheries management during the last 10 years. Improved access to great ponds and large rivers resulted from legislation enacted in the early 60's.

Lake trout were firmly established in Quabbin Reservoir. Smelt problems were solved. The potential of Quabbin to produce landlocked salmon was proven.

The Division shut down three hatcheries that had produced 60,000 pounds of trout. The same number of men were able to rear 200,000 pounds of trout at the Division's new McLaughlin hatchery in Belchertown.

One of the deactivated trout hatcheries was re-fitted for modern salmon production.

The Connecticut and Merrimack Rivers show great promise for anadromous fisheries. Joint efforts of Federal and state agencies during the 10 years since 1963 have created much optimism for restoring shad and Atlantic salmon to historic significance.

Since 1963 trout production in poundage has increased by about a third.

To increase interest in fishing and produce some potentially valuable data the Division, with the financial backing of the Division of Commerce and Development, implemented the Freshwater Fishing Awards Program in 1963. Since that year all existing records have been broken save for one 12 pound 1 ounce largemouth bass.

All in all it has been a fabulous ten years. The forecast for the next ten is even better.



The Board Reports

The Fish and Game Board is proud to present to the citizens of the Commonwealth the 108th Annual Report of the Massachusetts Division of Fisheries and Game.

This year began with a number of innovative programs dealing with fish and wildlife conservation. The Board quickly began a hectic schedule of regulatory hearings, followed by an all-around busy year for Director Shepard and his staff.

The black duck imprinting program is an ingenious method of coping with the crippling loss of habitat that Massachusetts is experiencing every day. As one branch of the agency tries to establish more breeding by native waterfowl under artificial conditions, another branch is working hard to purchase and protect remaining wetlands for natural breeding. This well-coordinated effort is typical of the agency's attempts to provide well-balanced and efficient programs.

Massachusetts celebrated National Hunting and Fishing Day on September 23, 1972. The Board feels that this is a significant day in the lives of our citizens in that it honors the contribution of fishermen and hunters to fish and wildlife conservation. Both the President and Governor Sargent signed proclamations in recognition of the contribution of 55 million American sportsmen to the conservation of the nation's renewable natural resources.

The Board held a hearing early in the year to establish a milestone toward specialized, quality hunting. The Board granted a three-day "primitive weapons deer season" to begin the Monday following the regular shotgun season in December of 1973. Our regulation could not provide for the use of rifles or the establishment of a special fee as both would depend on a vote by the Legislature.

The Board was pleased to learn of the appointment of Dr. Donald R. Progulski to head the Department of Forestry and Wildlife Management at the University of Massachusetts and to acknowledge the fine job of Professor Arnold D. Rhodes — Department head for 16 years. Professor Rhodes has returned to full-time teaching at the University's Forestry School.



Board members pictured above are: Top row, left to right — Roger D. Williams, Chairman; Bradlee E. Gage, Secretary. Bottom row, left to right — Martin H. Burns, Kenneth F. Burns, Harry C. Darling.

The Massachusetts Conservation Camp (having completed its 23rd session) continues to be a vital part of the Division's education effort. Youngsters receive expert training in the skills of hunting, fishing and nature study. The Division is proud of the many camp graduates who currently have leadership roles in environmental fields.

In August of 1972 Peter Pekkala, Game Manager, was assigned to the Connecticut Valley District to open an office at the Swift River Wildlife Management Area. This will bring Division programs closer to the people, establishing communications and a better knowledge of wildlife problems in towns that, in the past, were on the fringes of the Western and Central Districts. Westerly towns in the Connecticut Valley District are Colrain, Shelburne, Conway, Williamsburg, Westhampton, Southampton, Westfield and Southwick. On the eastern boundary the towns are Warwick, Orange, New Salem, Ware, Palmer and Monson. In the near future, a permanent District Manager and full District crew will work out of the Belchertown facility.



Where possible the Division assisted the Massachusetts Citizens to Save Open Space in pushing their Farm Referenda. These were written into the November ballot to enable the Legislature to amend the Constitution and assess farmland for its current rather than its potential use. The referenda received an overwhelming "yes" vote so that the Legislature can proceed in this important step to slow the destructive and unplanned development of our remaining open space.

At the waterfowl hearing held on August 18, the Board elected to continue for a second year the three-year experimental zoned waterfowl season. The season is designed to spread hunting opportunities over a greater area.

A much needed increase in license fees went into effect on October 11. This was earlier than expected. Administrative personnel thought the new fees would go into effect January 1, 1973. However, an oversight in stipulating effective date made the bill law 90 days after it was signed by the Governor even though no licenses were available. The Division made an effort through every available medium to contact 56,000 sportsmen before the 90-day deadline of October 11, 1972. The effort was somewhat successful as 31,000 bought licenses during that period; 25,000, however, paid the 66 percent increase. Hunting and fishing licenses went from \$5.25 to \$8.25. Archery stamps went from \$1.10 to \$5.10.

For the first time in Massachusetts waterfowl hunting history, the sea duck opening was delayed because of the red tide. An estimated 300 birds of various species were found dead — none after October 3. The sea duck season opened with the regular duck season on October 20.

The Board was pleased to honor two brothers — Ralph and Harold Bitzer — whose combined service to the Division totaled 105 years (the Division itself is 107 years old). On October 14, the Montague Fish Hatchery had its name changed to the Bitzer State Fish Hatchery. Harold retired with 50 years' service and Ralph with 55 years' service.

The first paraplegic deer hunt was a success in terms of enthusiasm and participation of nine paraplegics and the cooperation of Fish and Game

personnel. No deer were taken but all concerned felt that the effort was worthwhile.

The archery season harvest of 77 deer was a significant milestone. It nearly doubled the previous year's take and indicated that the antlerless permit system can be made to work effectively.

Another headache that the administration had to cope with was the printer's failure to deliver the 1973 licenses for potential Christmas sales. Final delivery took place the second week in January.

Director Shepard and Law Enforcement Director Ken Crossman worked out a plan whereby individuals who planned to hunt, fish and trap could participate but would, at a later date, have to furnish proof of purchasing a 1973 license.

In an effort to increase the recreational opportunities of Massachusetts fishermen, the Board voted on March 30 to begin the fishing season the Saturday preceding Patriot's Day and end the regular season the Sunday following the third Saturday in October. A special extension, not to include reclaimed trout ponds, runs from the end of the regular season to the last day in February with a two-fish-per-day limit.

In closing, we would like to thank the men and women of the Fish and Game Division for another year of outstanding performance. We are continually impressed with the overall spirit and dedication that we see in the Fish and Game Division. We would also like to thank environmentalists — whether they be consumptive or non-consumptive users of fish and wildlife — for their support without which we would cease to be a significant force for the preservation and restoration of the environment and the fish and wildlife resources that it supports. Lastly, we would like to thank other state agencies and members of the Legislature and executive branch for their continued assistance and cooperation.

Respectfully submitted,
Roger D. Williams
Bradlee E. Gage
Harry C. Darling
Kenneth F. Burns
Martin H. Burns





photo by Jack Swedberg



photo by Jack Swedberg

Above: William Harper of West Acton took this record laker — 16 lbs. 8 oz. — but soon lost it to Paul Drenzek of Ware who took a 17 lb. 13 oz. laker. Right: Division fisheries personnel check Quabbin salmon.

FISHERIES

Anadromous Fish Restoration

THE majority of the Division's anadromous fish programs continued to center around the restoration and enhancement of Atlantic salmon and American shad in the Connecticut River. Unfortunately, the failure of the Federal Power Commission to act swiftly in issuing a direct order to the Holyoke Water Power Company relative to the enlargement of the existing fish passage facilities, set the completion schedule for planned modifications back at least one year. On the brighter side, the functional designs for the proposed fishway at Turners Falls were completed, reviewed and accepted by all concerned, and presently final designs are on the drawing board.

As in 1972, the abnormally wet and cold spring plus cancellation of the annual shad derby sponsored by the Holyoke Water Power Company, produced a negative effect upon the sport fishery at Holyoke, where an estimated 4,403 anglers creeled 3,387 shad during 11,277 hours of angling.

The fishlift at Holyoke passed 22,649 adult shad which was only one-third of what it passed during its best year, 1970. The high water and cool temperatures plus the fact that the number of shad entering the river was down considerably from previous years all contribute to the low passage figure.

The spawning and production of juvenile shad, the result of releasing 1,575 adult shad above the Turners Falls dam, was documented, and migration patterns of adult shad in the vicinity of the Northfield Mountain Pump Storage Plant were determined for various stages of plant operations.

Approximately 4,000,000 fertile shad eggs were shipped from the Connecticut River to the Nemasket, Charles and Merrimack Rivers.

The completion of two salmon smolt imprint stockout pools, a gift of RASA (Restoration of Atlantic Salmon in America) at Tarkill Brook, Agawam, on the Mawaga Sporting Club property and the release of 11,000 smolts at the brook highlighted this year's salmon restoration efforts.



photo by Jack Swedberg

Fin clipping provides
valuable information on harvest.

Coldwater Fish Investigations

Surveys, inventories and creel census designed to evaluate the Division's current management programs form the majority of the coldwater investigations. Creel data from Quabbin Reservoir indicate 72,404 anglers caught 95,074 fish during 407,713 hours of fishing. Salmonids provided 27% of the harvest by weight while smallmouth bass continued to dominate the game species. Both salmon and lake trout catches were up significantly from the previous year. An estimated 1,345 lakereels and 1,076 salmon averaging 5.1 lbs. and 1.8 lbs. respectively were taken while 1.3 lb. rainbows formed most of the salmonid harvest numerically.

Although the high water and significant rise in reservoir level aided lake trout production, heavy spring silt loads served to decrease smelt production. No smelt control was necessary during the spring of 1973 nor should it be in the coming years due to the installation of water intake screens to be completed in 1974.

Creel censuses were initiated on the Swift and Squannacook Rivers to assess species utilization, holding capabilities, angler harvest, and effect of the stream season extension.

Harvest of kokanee salmon, 201, at Onota Lake was much less than hoped for and provided very little in the way of increased angling.

During August and early September of 1972, the temperature profile and vertical distribution of dissolved oxygen was determined for 27 ponds. Twenty-one of these contained a volume of trout water in accordance with Massachusetts standards (70°F or less and 5 ppm or more of dissolved oxygen within the same layer). These volumes of coldwater habitat ranged from 1.5 to 100% of total pond capacity.

The brown trout/sea-run alewife forage relationship study at Higgins and Hathaway Ponds reached the halfway mark. As was the case with rainbow trout, young-of-the-year alewives appeared to provide very little in the way of forage to brown trout and in fact may be detrimental to fast growth through competition for the invertebrate food base.

Biological and chemical surveys conducted at 77 stations throughout the 721-square-mile Chicopee River Watershed were completed. Since last surveyed, in 1943, relatively little change has occurred in most tributary streams; however, the disappearance of smallmouth bass from the watershed is significant.

Warmwater Fish Investigations

The northern pike population of Cheshire Reservoir continued to expand during 1972-73.

The winter harvest, 988 lbs., was almost double that of the previous year's catch. The release of 905 compared to 423 sublegal pike is a further indication that the pike population is increasing. The desirability of this species is evidenced by a significant increase in total pressure; an estimated 5,284 ice fishermen fished 31,693 hours December 1972 to February 1973.

Plans have been made to release 3,000 yearling northern pike in Brimfield Reservoir as soon as they become available.

The first experimental tire reef units were installed at Little Chauncey Pond, Westboro. Biologists will observe fish colonization and homing tendencies of the various species associated with these structures.

From May through November, 25 ponds were sampled to determine angling potential, species complex, abundance and growth rates.

Pesticide monitoring was continued on 20 rivers and indications are that hard pesticide levels are beginning to decrease while industrial pollutants, polychlorinated biphenyls (PCB) levels continue to increase. Since these pollutants act similarly to hard pesticides with respect to food chain concentration and effect, it is essential that their levels be constantly surveyed.

Pumped Storage Power Process Investigations

The first year of operational studies to determine

the environmental impact of the Northfield Pumped Storage Project on the fish of the Connecticut River was initiated, while the second year of pre-operational studies concerning the effect of the Bear Swamp Pumped Storage Project on the fish of the upper Deerfield River continued on schedule. These studies are financed by the Northeast Utilities Service Company and the New England Power Company respectively. These studies include creel census as well as monitoring benthic invertebrate populations and water quality parameters.

Massachusetts Cooperative Fishery Unit

Seven investigations were financially supported by the Division of Fisheries and Game through the Cooperative Fishery Unit at the University of Massachusetts. Two students received Master's Degrees for their studies of shad behavior in the Connecticut River.

Other studies included ecology of kokanee salmon in Onota Lake, biology of spottail shiners, food habits of juvenile shad and game fish below Holyoke Dam and effect of mercury on early development of white suckers in the Mill River.

Respectfully submitted,

Peter H. Oatis

Chief Aquatic Biologist



STATE TROUT STOCKED 1972-73

	6"	6-9"	9-12"	12-14"	14+	Weight	TOTALS						
SUNDERLAND							Rainbow	82,000	59,580	425,697	97,939	4,360	375,062
Rainbow		19,500	90,000			85,091	Brook	15,500	137,100	59,579			48,910
Brook		70,000	4,900			14,756	Brown	21,000	107,438	28,045			58,586
Brown		23,400				4,700		118,500	304,118	513,321	97,939	4,360	482,558
Total		112,900	94,900			104,547							
MONTAGUE								Number	Weight	Average per lb.			
Rainbow							Rainbow	669,576	375,062	1.78			
Brook	32,000	2,650	78,000			73,159	Brook	212,179	48,910	4.33			
Brook	15,500	34,500				6,796	Brown	156,483	58,586	2.67			
Total	47,500	37,150	78,000			79,955		1,038,238	482,558				
McLAUGHLIN								FEDERAL TROUT					
Rainbow		23,630	188,097	97,939	4,360	144,797		5-6"	6-9"	9+	Number		
Brook		16,000	52,729			19,570	Brook	15,000	1,644		16,644		
Brown	18,000	66,638	3,000			21,678	Brown	20,000	35,547		55,547		
Total	18,000	106,268	243,826	97,939	4,360	186,045		35,000	37,191		72,191		
SANDWICH								STATE PRODUCTION SALMON					
Rainbow	50,000	13,800	69,600			72,015		Number	Weight				
Brook		16,600	1,950			7,788	Coho Salmon	66,380	3,363				
Brown	3,000	17,400	25,045			32,208	Kokanee Salmon	112,223					
Total	53,000	47,800	96,595			112,011	Atlantic Salmon	1,200	134				
							Landlocks	19,850	1,458				



photo by Jack Swedberg

WILDLIFE

Drake wood duck about to be released after banding.

Introduction

The arrival of wild turkeys from New York State during the fiscal year is cause for happiness among hunters and nature lovers alike. During the next few years Division personnel will be watching closely to ascertain the successful establishment of released birds. Additional stocking sites are planned already, and hopefully, with a truly wild strain of eastern wild turkeys in our woodlands the "year of the turkey" will be close at hand.

Our management program is expanding as manpower and finances permit. The acquisition of additional lands statewide has placed district personnel under a rigorous schedule of posting, boundary marking, development of public access sites, and general management and maintenance work. To meet the additional demands of an expanding program a fifth district has been established in the Connecticut River valley. Several years will be required before the district, quartered on the Swift River Wildlife Management Area, becomes fully operational and well-equipped.

The scope of game research and management activities performed by division personnel are highlighted in the pages that follow.

Statewide Beaver Harvest

A total of 1674 beaver were trapped by 105 trappers in 92 towns during the 1972-73 beaver season. This record take is 316 more than last season, and 600 more than a ten-year (1963-1972) average. Berkshire and Franklin counties together yielded 967 beaver (54.1% of the harvest). For the second season in a row, the take west of the Connecticut river increased, and that east of the river decreased. Over one-third (37.8%) of the beaver were taken in the first two weeks of the 15-week season. The average pelt price of \$20, coupled with the high harvest, produced a record harvest valuation of \$33,480.

Wild Turkey Restoration Study

Emphasis on the turkey restoration study has been shifted from the Quabbin strain birds of semi-game-farm ancestry to wild-trapped Eastern turkeys. Through the courtesy of the New York Department of Environmental Conservation, seven turkeys were trapped and transferred to Beartown State Forest, Berkshire County, in March 1972. This cooperative program continued in 1973 with the acquisition of ten additional turkeys (five adult males, four immature males, one adult hen), which were also released in Beartown. Further releases are planned for 1973-74. Should this stocking prove successful, surplus birds will be trapped and transferred to other areas in the Berkshire area, and thence to other suitable locations statewide.

Black Bear Study

Bear hunting showed an increase in popularity in 1972, with 420 individuals requesting a permit, as opposed to 200 in 1971, and 214 in 1970. All hunters were sent a questionnaire and 336 usable returns (80%) were received. Two hundred and thirteen persons did hunt bear in 1972, of whom 187 hunted specifically for bear, and 26 hunted only incidentally while bow-hunting for deer. The average bear hunter expended 16.8 hours during 2.4 days in pursuing his quarry. Berkshire and Franklin counties were the most heavily hunted, with the towns of Florida, Monroe, Rowe, and Savoy being favored locations. Sixteen hunters saw bear during the season and one hunter took a bear, a 165-pound female, taken in Savoy on opening day. This was the first bear legally harvested since 1969. One other bear was illegally shot in Royalston during deer week.

Hunters reported 179 bear sightings via the questionnaire. These and other current reports are being aggregated to determine the distribution of

bear in Massachusetts. Concurrently, historical records of bear are being located in old books and papers, and a published bulletin on the history and status of the bear in Massachusetts and adjacent states is planned for mid-1974.

White-tailed Deer

The 1972 deer harvest totaled 2,291 animals of which 76 were taken during the three-week archery season. Sixty-six percent of the harvest (1,504 deer) were males; males comprised 61 percent of the 1971 harvest (1,385 of 2,284 deer).

The number of mainland antlerless deer permits was reduced from 6,000 to 4,000. Island permit allocations remained unchanged with Nantucket receiving 400 and Martha's Vineyard receiving 600. The total number of permits issued statewide, including landowners, was 5,326. Permit holders took 1,066 deer. Management goals are to expand the size of the deer population in areas that can carry more deer, and to increase the size of the deer harvest while maintaining a male:female harvest ratio of approximately 3 males per female.

Gosling Transplant Program

Twenty-six goslings six to ten weeks old were trapped and transplanted to western Massachusetts. Two complete checks of gosling transplant sites were made in the spring of 1972. Two broods hatched on the Quabbin Reservoir but only one brood of six goslings was observed. Both adults observed with the brood were color marked. A pair of adult geese and a brood were also observed at Thousand Acre Swamp, New Marlborough in 1971 and a nest of six eggs was located in 1972. Cooperators have reported three pairs of marked birds that have raised broods on or near release sites.

Preseason Waterfowl Banding

A total of 1,393 birds were banded during the 1972 preseason banding period. The number of birds banded by various techniques is as follows: airboat night-lighting 838 (30 birds banded with Great Meadows NWR bands); bait trapping, 249; cannon netting, 81; drive trapping, 126; nest box trapping, 69; miscellaneous, 30. Mallards (531), wood ducks (220), black ducks (149) and Canada geese (129) comprised the bulk of the bandings.

Despite a poorly running airboat, a record number of waterfowl and marsh birds were banded by this method during the 1972 season. The success rate of 41.9 birds per trip exceeded the 1971 high of 27.3 birds per trip.

Winter Trapping Program

State personnel along with three cooperators banded a total of 955 ducks at 22 locations using bait traps or cannon net. Four hundred sixty-nine ducks were banded on the coast as part of the regular winter trapping programs. Black ducks made up 81.9 percent of this total, mallards 10.6 percent, and mallard black hybrids, 7.5 percent. The park mallard winter banding program resulted in the banding of 378 mallards, 29 black ducks, 74 mallard X black hybrids and 5 mallard X domestic hybrids. The 1973 winter banding season was the poorest in several years.

Winter Inventory Flights

Winter inventory flights were made on 9-10 January 1973. Coastal Massachusetts from the New Hampshire to Rhode Island line was surveyed. The waterfowl count of 79,687 was down 38 percent from 1972, 40 percent from the ten-year average. Black ducks were down 22 percent from 1972, 16 percent from the ten-year average. Scaup, sea ducks (notably scoters) and Canada geese were also down. Buffleheads were up and goldeneyes remained unchanged from both 1972 and the ten-year average.

A November flight prior to the opening of the coastal gunning season revealed a build-up of puddle ducks and diving ducks as well as Canada geese above population levels normally observed during the November flights in past years. This is believed to be related to the special Massachusetts zoning hunting season. Hunting was not allowed in the coastal zone until late November.

Black Duck Imprint Program

One hundred thirty-two black ducks reared from eggs produced by black breeding stock at the Ayer Game Farm were held over winter at Ayer. Fifty-four females and 58 males were released on selected areas during the spring of 1973: 19 females and 18 males at the Ipswich Audubon Sanctuary, Topsfield; 13 females and 16 males at the Bristol Blake State Reservation, Norfolk; and 22 females and 24 males at a beaver park within the Quabbin Reservoir boundaries, New Salem.

Nesting cylinders had been erected on the release areas the previous winter. Nests were initiated in two of 10 cylinders at Topsfield, in three of 12 cylinders in Norfolk and in two of 15 cylinders located on beaver ponds in the Quabbin. All seven nests were successful although in one, only two of nine eggs hatched.



Evaluation of Starling-Proof Nesting Cylinders

Wood ducks nested in 17 out of 67 functional cylinders. Thirteen of the nests were successful; one nest was flooded out, one destroyed by a raccoon and two were abandoned for unknown reasons. One sparrow hawk nested successfully in a cylinder as did a black duck released during the black duck imprint study. Wood duck usage of experimental boxes has increased steadily since the inception of the program in 1970 when wood ducks nested in only 6 of 59 boxes. Area usage dropped, however during 1973, with wood ducks using cylinders on only four out of 19 areas versus six out of 19 in 1972. However, eight of the 19 areas involved in this year's study had no wood duck usage in either wooden boxes or cylinders. No starlings have nested in the cylinders since the start of the program.

Wood Duck Production Study

In 1973, emphasis was shifted from the study of general reproduction data to several specific dump nest studies. The first of these involved the development of an automatic color marking device that will mark incubating female wood ducks as they enter the nest box predator guard. While the device itself successfully marked birds, tests are being made to develop a better marking solution that will last several weeks on a bird.

A second study concerned the development of artificial dump nests by adding game farm wood duck eggs to normal sized nests. Previous studies in Massachusetts have indicated the wood ducks can frequently raise a larger number of ducklings than they normally do.

In conjunction with these studies, data was also collected on general reproduction. The results indicate a rising trend in the number of nesting wood ducks across the state. Production estimates based on data from 30 sites, indicate that wood ducks have increased in numbers slightly over 1972 with total production up 30 percent since 1970.

Game Farms

Efforts were continued to automate the rearing of day-old chicks by the use of automatic feeders. At the Wilbraham Game Farm, two brooder houses were equipped with automatic feeders as a result of obtaining surplus equipment through state agencies.

Rearing pen construction has been improved by the use of synthetic material for top wire. Nylon netting was used with excellent success at the Ayer Game Farm, which has reduced construction costs

by 50 percent. Other maintenance work was comprised of building new bird house runways and guard fences.

Mortalities at several game farms were high due to an outbreak of sleeping sickness. Major mortality from eastern encephalitis occurred at the Wilbraham farm starting in late September. Over one thousand birds died among the growing stock as a result of this infection.

Following diagnosis of the infection at the Wilbraham farm, the immediate area was sprayed by helicopter using three ounces of malathion per acre to control the mosquito population. Affected groups were "specked" to prevent feather pulling which is known to be a means of transmitting the disease among pheasants following introduction by mosquitoes.

Although mortality among pheasants may be very high, the bird is a relatively poor host for the virus and is not an important host in transmitting the disease to other birds or animals.

GAME DISTRIBUTION

July 1, 1972 to June 30, 1973

PHEASANT LIBERATIONS:

August — 12 weeks old	7,640
October — November	41,005
Sportmens Club Rearing Program	7,145
TOTAL	55,788

Miscellaneous Releases:

Hybrids	821
Brood Stock (Spring release)	
Field Trials, Youth Hunt, etc.	1,103

QUAIL LIBERATIONS:

Public Hunting Grounds	2,755
Field Trials	687
Brood Stock (Spring release)	
TOTAL	3,442

HARE LIBERATIONS:

Distributed in March	1,591
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Respectfully submitted,
Warren W. Blandin, Chief of Wildlife Research
E. Michael Pollack, Chief Game Biologist



Information and Education



Mass. Conservation Campers learn rifle shooting (top). Winners of awards for conservation-related activities (above).

PART of the I and E Section's function is assisting in the administration of the Conservation Camp. I and E input includes booking, collecting funds for participants, providing films and offering training in fish and wildlife conservation.

The Conservation Camp completed its 23rd session this year with 150 boys showing superlative interest, cooperation and overall good behavior. For the first time two boys won in two categories: Paul Pajak, sponsored by Mahar Regional High School, took first in rifle and casting. Larry Wood, sponsored by Wankinquoah Rod and Gun Club, placed second in archery and rifle.

Another I and E function that provides a lot of interest as well as some potentially valuable information is the freshwater fishing awards program sponsored by the Department of Commerce and Development and implemented by Fish and Game.

The state record lake trout — 13 lb. 6 oz., set in 1971 by Allan Storm of Gardner — was broken with a 13 lb. 10½ oz. fish taken July 4, 1972 by Joe Kulig of Palmer. Kulig held the title for one day, then lost it to William Harper of West Acton who took a 16 lb. 8 oz. laker. This last fish measured 34 inches, had a girth of 20 inches and was checked at Gate 8 of Quabbin. A 17 lb. 13 oz. laker caught by Paul Drenzek of Ware broke this record. The fish was 34¼ inches long, had a girth of 21¾ inches and was 11 years old.

The longest, but not the heaviest, fish ever reported into the freshwater fishing contest was registered by Richard B. Deres of Worcester. It was a northern pike measuring 46½ inches — one inch longer but three pounds lighter than the 24 lb. 6 oz. record fish taken from Onota Lake by Chris Ginthwain of Pittsfield.

A 10 lb. 28⅞ inch walleye taken by Eric Christenson of Stow broke the existing state record. The fish turned out to be 14 years old.

The I and E Section supported farmers on the Environmental Bill of Rights and the Farmland Referendum. Fish and Game was firmly committed to support the Massachusetts Citizens to Save Open Space in their effort to protect vanishing farmland, greenbelts and watersheds.



An appeal in a news release for a worm snake brought favorable response. At least three of these very small snakes were found along southern sections of the state and kindly donated to the Division to be photographed as illustrations for an article on snakes published in **Massachusetts Wildlife**. The article was written by Terry E. Graham and intended to offset fear of snakes. The dead giveaway to the only two poisonous snakes in Massachusetts (the copperhead and timber rattler) is the vertically elliptical pupil and pit or heat-sensing hole between eye and nostril.

Governor Francis Sargent signed into law a bill that sets apart the fourth Saturday in each September as National Hunting and Fishing Day. The I and E Section coordinated the Division's efforts in this regard.

The 1972 archery stamp featured an American Indian drawing. The idea was contributed by Mark Malchik with the printing design prepared by **Boston Globe** artist Cyril Neuwelt.

The Division worked with sportsmen in providing a "youth upland bird hunt" for 15- and 17-year-olds who had graduated from the state hunter safety course.

On September 28, 1972 the Division's administration discovered that the increase in license fees thought to go into effect on January 1, 1973 had to go into effect 90 days after signing of the bill because the effective date was omitted on the final draft.

The I and E staff took on one of the biggest jobs in its history in trying to locate 50,000 sportsmen before October 11, 1972 (the deadline for buying a 1972 license). After October 11 the same license that cost \$5.25 cost \$8.25, and an archery stamp cost \$5.10 even though the stamp read \$1.10. It was apparent that the Division had an obligation to contact all sportsmen. All types of media were used to the fullest. The Division owes a great debt to newspapers, T.V. and radio. Later, records revealed that 20,470 hunters and 1,462 archers were not contacted and paid the new price. From a positive viewpoint, over 30,000 hunters and 4,000 archers were informed and bought licenses at the old rates.

As if the Division didn't have enough problems in trying to locate 50,000 sportsmen and instruct them to buy their licenses, more public relations problems were heaped on us in the waterfowl field. The sea duck opening (scheduled for the 23rd of September) had to be postponed and all sea duck hunters located in order to protect them from the remote possibility of eating a bird contaminated by the red tide. Division officials felt that there was little danger, but better safe than sorry.

On October 14, the Fish and Game Board and administrative staff held a rededication ceremony at the Montague Hatchery to honor Ralph and Harold Bitzer whose combined service in fish hatcheries computed to 105 years.

At the dedication address, Fish and Game Director James M. Shepard pointed out the ceremony was also in honor of those sportsmen who have assisted in the construction and maintenance of certain facilities at the hatchery. In the 30's, sportsmen's clubs raised thousands of dollars for the "Montague Fund" earmarked for construction of tanks, pools, roads and tree planting. This kind of cooperative spirit continues today with citizens, sportsmen's clubs and leagues purchasing and giving land for wildlife habitat.

Fiscal 1973 will go down in history as one of the most difficult years for the Fish and Game Division's public relations effort. In addition to the two problems cited above, the printer failed to deliver the 1973 licenses on time. It was bad enough to think they would not be in for early Christmas sales; to find out that they would not even be in the hands of the Town and City Clerks until around January 15 turned the situation into a disaster. Fortunately Director James M. Shepard of the Fish and Game Division and Director Kenneth A. Crossman of Law Enforcement worked out a reasonable solution to the difficult problem by which an individual who planned to hunt, fish or trap within the framework of the law should participate and later be required to furnish proof that he had purchased a 1973 license as soon as the licenses were available.

A mistake made by a UPI writer on the dog-restraining order resulted in national confusion and eventually a correction. Meanwhile Fish and Game was criticized for its attitude evidenced by UPI-stated shoot-to-kill order on coyotes. (The UPI writer apparently thought dogs found in the wild chasing deer had to be coyotes.)

The Magazine

The theme of this year's annual report being "Ten Years of Progress," it seems fitting to briefly discuss the progress which has occurred in **Massachusetts Wildlife** over the past decade. In terms of format, the progress has not been as dramatic as we would have liked. We have obtained a color cover, but are still confined to 21 nine by six-inch pages.

Although **Massachusetts Wildlife** is the smallest of all the state magazines, it does enjoy a national reputation for journalistic excellence, containing



photo by Jack Swedberg

Director James M. Shepard (fifth from left) chats with sportsmen during fly tying demonstration on National Hunting and Fishing Day.

photographs and articles that consistently outshine material published in the much larger magazines.

Our paucity of paper has given us two unattractive alternatives: 1. say nothing and look pretty; 2. say something and look ugly. We chose the latter, using a cramped 8-point type face with no leading and leaving little white space in our layout. Although this makes the magazine less readable, those who are willing to brave the fine print get something for their effort.

We hope that in the future we will be able to obtain the funds necessary to publish a magazine that can compete in format with those of our sister agencies.

Usually, we try to print three in-depth feature articles per issue. Two are contributed by dedicated conservationists both inside and outside the Division for whom a chance to educate the public and possibly slow the pace of current environmental carnage is payment enough. The third is written by **Massachusetts Wildlife's** Managing

Editor, who, as a paid employee of the Fish and Game Division, can afford to spend the time necessary to research and write an environmental article of the quality demanded by such journals as **Audubon** and **National Wildlife**.

As an education tool, **Massachusetts Wildlife** continues to decry environmental degradation, promote rapport between consumptive and non-consumptive users of wildlife, instill in the general public a respect for and understanding of life and the water and land that makes life possible, and keep the public informed as to what we as a conservation agency are doing to protect and restore the fish and wildlife resources of the Commonwealth.

It seems that traditionalists are at last beginning to accept the magazine's new role as an environmental journal instead of a sporting bulletin. Straight hunt-fish copy may be had at any newsstand for pocket change. We are not a hunting and fishing club, and the articles we publish on game and fish have to do with our management of these resources, not just how to harvest them. We are not equipped to compete with the three national hunting and fishing magazines, but as a local voice for the environment — which with increasing frequency is being correctly recognized as synonymous with hunting and fishing — we feel that we can offer the sportsman a very substantial return on the not-very-substantial portion of his license revenue allocated to magazine production.

High points in this year's volume of **Massachusetts Wildlife** in the three categories of Environment, Natural History, and Management include the following: Under Environment: "The Great Land Gouge and How to Curb it," July-August, an article supporting the farmland referendum; "The Rubbish in Our Wake," on the solid waste crisis, September-October; "Instant City," decrying the proposed rape of Warren, Mass., March-April. Under Natural History: "The Peregrine Symptom" and "Flowers Unseen," both in the July-August issue and dealing with the peregrine falcon and orchids respectively; "Feathered Jewels," September-October, on hummingbirds; "The Passing of the Heath Hen" and "Snakes of Massachusetts," both appearing in the November-December issue; "A New Look at Castor" and "The Squirrel Freak," both in the January-February 1973 issue and dealing respectively with beavers and flying squirrels; "To Shoot an Eagle," March-April, on photographing eagles in Quabbin; and "Meet New England's New Wolf," May-June. Under Management: "The Woodcock — Everybody's Bird," September-October; "Return of the Cavity Nesters,"



November-December (hooded mergansers and wood ducks); "Welcome the Wild Goose," on the Division's goose management program, January-February 1973; "Pond Reclamation," March-April; "Bugging Does Pay," on the electronic surveillance of wildlife, May-June.

Editorials by Director James M. Shepard dealt with: National Hunting and Fishing Day; land use; ignorance and prejudice concerning the new wolf; the energy crisis; the rape of our watersheds by such Federal bureaucracies as the Corps of Engineers, Soil Conservation Service, TVA and Bureau of Reclamation; and a plea to plug the hole in the Wetlands Act created by the infamous Agricultural exemption.

Respectfully submitted,
Richard Cronin
Chief of Information and Education



RETIREMENTS

Dorothy Childs — Retired 3-31-73 as Principal Bookkeeper from the Boston Office after 18 years' service with the Commonwealth.

Walter Covell — Retired 8-26-72 as Conservation Helper at the Sandwich State Game Farm after 19 years' service with the Commonwealth.

Roy Foster — Retired 4-30-73 as Conservation Skilled Helper at the Ayer State Game Farm after 21 years' service with the Division of Fisheries and Game.

Kenneth Mudgett — Retired 9-30-72 as Conservation Helper from the Ayer State Game Farm after 21 years' service with the Commonwealth.

Thomas F. Palmer, Jr. — Retired 1-31-73 as Conservation Skilled Helper from the Southeast Wildlife District after 21 years' service with the Commonwealth.

Albina P. Tessier — Retired 12-31-72 as Head Administrative Assistant, Boston Office, after 42 years' service with the Commonwealth, 22 of which were with the Division of Fisheries and Game.

Stanley Torrey — Retired 2-28-73 as Assistant Game Culturist at the Sandwich State Game Farm after 26 years' service with the Division of Fisheries and Game.

William Tyback — Retired 7-29-72 as Conservation Skilled Helper from the Sandwich State Game Farm after 21 years' with the Division of Fisheries and Game.

Richard Woolner — Retired 6-23-72 from the Westboro Field Headquarters as Wildlife Photographer after 13 years' service with the Division of Fisheries and Game.

Harry C. Darling — Retired 10-6-72 as Board member. Appointed to the Board, Division Fisheries and Game 12-13-62, 10 years' service.

LEGISLATION

Chapter

573 — An Act Further Regulating the Licensing of Propagators and Dealers of Certain Birds and Mammals and Increasing the License Fees therefor.

Approved July 6, 1972

580 — An Act Transferring Certain Land in the Town of Westboro from the Department of Mental Health and the Trustees of the Westboro State Hospital to the Division of Fisheries & Game.

Approved July 6, 1972

706 — An Act Further Regulating Licensing Programs and Fees Relative to Fish, Birds and Mammals.

Approved July 13, 1972.

782 — An Act Further Protecting the Inland Wetlands and Flood Plains of the Commonwealth.

Approved July 18, 1972.

784 — An Act Relative to the Protection of Wetlands.

Approved July 18, 1972.

156 — An Act further Regulating Trapping by Minors and the Issuance of Minors Certificate of Competency in the Safe Handling of Firearms.

Approved April 9, 1973.

206 — An Act Prohibiting the Issuance of Trapping Licenses to Certain Non-resident Citizens of the United States.

Approved April 19, 1973.

402 — An Act Relative to the Law, Shooting on Commercial Shooting Preserves on Certain Sundays.

Approved June 13, 1973.

REALTY

WITH the closing of the 71-72 fiscal year, it was sadly noted that monies from our existing bond issue were running dangerously low. We realized that the continuing acquisition of important uplands, providing areas for the pursuit of all outdoor recreation, would end all too soon. We are experiencing an era of expanding population coupled with an exodus from city dwelling to suburban living. This creates an insatiable appetite for land to accommodate sprawling shopping centers, multi-family complexes and a network of highways, all of which consume open space with reckless abandon. Lands lost to development are lands lost forever! The need for land has created a competitive and speculative market resulting in skyrocketing prices.

Fortunately, there are those who are conservation-minded and foresighted enough to realize the shortcomings of developing open space. This was the case of an acquisition in the Town of Charlton in Worcester County. Two hundred eighty-seven acres offering open fields, interspersed with hedgerows, surrounded by woodlands and complemented by marshes, provides an area where all species of wildlife are found. The owner of this property conveyed it to this agency at 50% below an offer made him by a developer. We sincerely appreciate his generosity.

Eighteen acres were acquired in the Town of Chesterfield in Hampshire County. This parcel, adjacent to the East Branch of the Westfield River, is assurance that the property will remain natural and open to the general public. This property is located in the well-known "Chesterfield Gorge," an area acquired by various agencies of the Commonwealth and providing a wilderness fishing and wildlife area.

Several parcels of property abutting the Crane Pond and Downfall Wildlife Management Areas in the Northeast were purchased. These acquired properties were in holdings or periphery lots in jeopardy of becoming house lots. The impact caused by the construction of a residence adjacent to a wildlife area is profound. The propagation of ill feelings toward hunting proliferates with each season. This feeling is mirrored by the posting of land. To circumvent this situation, the only avenue open is acquisition.



photo by Jack Swedberg

No Division activity is as critical to the future of hunting and fishing as the land acquisition program. Though man's work is painfully evident in this aerial shot of the Westboro area, the amount of undeveloped land is surprising.

An access area to the Millers River in Winchendon, Worcester County, was also acquired. This particular parcel, although small, has frontage on Route 12 connecting an 80-acre parcel previously purchased by this agency.

Access to Baker's Pond and parking space was purchased in the Town of Orleans in the County of Barnstable. Baker's Pond provides excellent fishing for trout.

Additional acreage was added to the Squannacook River, again insuring for the future. Sportsmen are to be commended for their initial land purchase and continuing cooperation here.

The Realty Section embarked on its wetlands acquisition program. The approval of Chapter 839 provided a sum of \$5,000,000 to be expended for the acquisition of coastal wetlands and inland wetlands. The Hockomock Swamp located in the Towns of Easton, Raynham, and Taunton in the County of Bristol, and West Bridgewater and Bridgewater in Plymouth County, became one of the top priorities of the Realty Section. Preliminary acquisition procedure included researching land ownership within the area containing 5000-plus acres, determining the periphery of the area for amicable purchase or eminent domain, compiling a list of landowners and their addresses, etc., all time-consuming procedures.

A large-scale map had to be drafted which



assembled all parcels by ownership found in the area of contemplated acquisition. This horrendous task was undertaken by Division personnel and volunteers. Persons interested in this project contacted the Division indicating a genuine interest in the eventual preservation of this valuable wetland.

Mr. Dennis Jolicouer, an engineer, was one of those interested enough to donate his expertise and time to draft a map depicting properties in the Hockomock. Long, tedious, eye-straining hours were put into compiling the map and this agency is exceptionally grateful to Mr. Jolicouer.

Special thanks is also in order for the assistance given by Mr. John Grant of Easton. Mr. Grant devoted considerable time and effort obtaining names of landowners in the Easton section of the "Hock." He was also responsible for directing the acquisition of some 137 acres of town-owned property by this agency.

Personnel in the Easton Town Hall are to be highly commended for their understanding, assistance, and readiness to help the Division of Fisheries and Game in its effort to purchase the "Hock." And to the many others who volunteered their services, too numerous to mention in this report, the Division extends its thanks.

Today, the Hockomock Swamp Acquisition Project is successfully showing signs of fruition.

Leaving the southeastern portion of our state, we travel to a deep, clear and cool lake in New Hampshire called Potanipo Pond, the birthplace of the Nissitissit River. This river winds toward the sea, entering Massachusetts in a small town in the northeastern section called Pepperell.

The Nissitissit meanders in serpentine grace to merge with the Nashua. Tall trees protectingly extend their limbs over this stream, keeping the water cool and shadowed. Thus is born a fine trout stream.

Realizing that this beautiful river was about to be raped by development, a group called the Nissitissit Watershed Association moved ahead with acquisition plans. This same group encouraged the Massachusetts Division of Fisheries and Game to acquire portions of the watershed in Massachusetts. To date approximately 75 acres are in various stages of acquisition, nearing finalization.

Plans to acquire marshland and adjacent uplands along the Parker River went beyond the stage of discussion and efforts towards this goal commenced. This project, too, is showing satisfactory results and will be commented on in the next annual report.

Respectfully submitted,
Floyd Richardson



Financial Report July 1, 1972 to June 30, 1973

RECEIPTS FROM FISHING, HUNTING AND TRAPPING LICENSES

Licenses	Price	Number	Gross Amount	Fees Retained by Town Clerk / city	Net Returned to State
1 Res. Cit. Fishing	* (5.25)	24,046	126,241.50	5,989.75	120,251.75
1 Res. Cit. Fishing	(8.25)	118,194	975,100.50	29,306.75	945,793.75
4-A Res. Cit. Female Fishing	* (4.25)	5,558	23,621.50	1,385.25	22,236.25
2 Res. Cit. Hunting	* (5.25)	24,515	128,703.75	6,092.50	122,611.25
2 Res. Cit. Hunting	(8.25)	28,711	236,865.75	7,116.25	229,749.50
3 Res. Cit. Sporting	* (8.25)	4,997	41,225.25	1,246.25	39,979.00
3 Res. Cit. Sporting	(13.50)	46,908	633,258.00	11,629.00	621,629.00
4 Res. Cit. Minor Fishing	* (3.25)	2,468	8,021.00	615.00	7,406.00
4 Res. Cit. Minor Fishing	(6.25)	13,969	87,306.25	3,486.75	83,810.50
9-A Res. Alien Fishing	* (9.75)	210	2,047.50	51.25	1,996.25
5 Alien Fishing	(11.25)	873	9,821.25	213.75	9,607.50
9 Non-Res. Cit. Fishing	* (9.75)	1,011	9,857.25	252.00	9,605.25
6 Non-Res. Cit. / Alien Fishing	(14.25)	2,578	36,736.50	636.75	36,099.75
7 Spec. Non-Res. Fishing	* (5.25)	1,829	9,602.25	456.25	9,146.00
7 Non-Res. Cit. / Alien 7-Day Fishing	(8.25)	460	3,795.00	113.75	3,681.25
8 Non-Res. Cit. / Alien Hunting (Sm. G.)	(20.25)	496	10,044.00	121.00	9,923.00
9 Non-Res. Cit. / Alien C.S.P. 3-day	(16.25)	35	568.75	4.25	564.50
5 Res. Cit. Minor Trapping	* (3.25)	72	234.00	18.00	216.00
10 Res. Cit. Minor Trapping	(6.25)	157	981.25	39.00	942.25
6 Res. Cit. Trapping	* (8.75)	178	1,557.50	44.00	1,513.50
11 Res. Cit. Trapping	(11.50)	440	5,060.00	107.75	4,952.25
12 Duplicate Licenses	* (.50)	1,345	672.50	-	672.50
12 Duplicate Licenses	(1.00)	2,083	2,830.00	-	2,083.00
10 Non-Res. Cit. / Alien Hunt.	* (16.25)	989	16,071.25	204.25	15,867.00
13 Res. Alien Hunting	(16.25)	395	6,418.75	6.00	6,412.75
14 Non-Res. Cit. / Alien Hunt. (B.G.)	(35.25)	343	12,090.75	84.25	12,006.50

15	Res. Cit. Sporting (over 70)	*FREE	3,087
15	Res. Cit. Sporting (over 70)	FREE	16,011
17	Res. Cit. Fishing (Blind & Para)	* (FREE)	194
16	Res. Cit. Fishing (Blind & Para)	(FREE)	663
19	Res. Cit. Hunting (Para)	* (FREE)	11
17	Res. Cit. Hunting (Para)	(FREE)	78
18	Res. Military-Naval Sporting	* (FREE)	1,746
	Res. Military-Naval Sporting	(FREE)	697

* Rates Prior to Oct. 11, 1972
After October 10, 1972

* 72,256 * 367,855.25 * 16,354.50 * 351,500.75
233,091 2,020,129.75 52,865.25 1,967,264.50

TOTAL	305,347	2,387,985.00	69,219.75	2,318,765.25
Refunds				136.25
				2,318,629.00

SUMMARY OF FISH AND GAME INCOME

Fishing, Hunting and Trapping Licenses \$2,318,629.00 *
Special Licenses, Trap Registrations and Tags 10,651.85 **
Archery Stamps 13,619.30
Rents 4,862.00
Miscellaneous and Sales 5,050.30
Court Fines 11,391.10
Refunds Prior Year 226.95
Pittman-Robertson Federal Aid 148,392.49
Dingell-Johnson Federal Aid 66,613.12
Anadromous Fish Projects Federal Aid 9,174.65
Mass. Mourning Dove and
Woodcock Reimbursement 6,073.45
Reimbursement of Services 34,658.20

\$2,629,342.41

* See "Receipts from Fishing, Hunting and Trapping Licenses"

** See "Deposit"

OTHER INCOME — INLAND FISHERIES AND GAME FUND

Interest on Investments \$ 3,300.00
Gasoline Tax Apportionment \$295,562.95

Surplus in Inland Fisheries and Game Fund
as of June 30, 1973 - \$444,051.07

HOW THE SPORTSMEN'S DOLLAR WAS SPENT

ADMINISTRATION

Administration	2670-0001	\$130,734.63		
Board of Fisheries and Game	2670-0001	158.48	\$ 130,893.11	4
Information-Education	2670-0001		97,713.86	3

FISHERIES PROGRAMS

Fish Hatcheries	2670-2300		464,873.45	16
Fisheries Management	2670-2300	\$203,316.48		
*** Fish Restoration Projects	2670-2342	65,241.41		
Fisheries Management	2670-2400	125,257.14		
Fisheries Research Coop. Unit	2670-2341	7,500.00		
** Certain Anadromous Fish Proj.	2670-2322	20,711.00	422,026.03	14

WILDLIFE PROGRAMS

Game Farms	2670-2400		325,649.03	11
Wildlife Management	2670-2400	\$125,257.14		
Wildlife Research Coop. Unit	2670-2441	4,807.50		
* Damage by Wild Deer	2670-2451	8,438.25		
*** Wildlife Restoration Projects	2670-2461	225,501.24		
**** Eastern Dove Management	2670-2502	2,625.00	366,629.13	13

ENGINEERING AND CONSTRUCTION

Repl. Hatch House, Sunderland	2670-2302	\$ 49,942.72		
Repl. Upper Pools, Sandwich	2670-2305	64,927.00		
Constr. Storage Bldg., Newbury	2670-2463	12,178.00	127,047.72	4

LAND ACQUISITION

* Land & Water Acquis. & Devel.	2670-9013	\$ 185,289.70		
* Coastal & Inland Wetlands	2670-9016	12,123.80	197,413.50	7

DEPARTMENT OF NATURAL RESOURCES

Natural Resources Officers				
Salaries and Expenses (26)	2620-1000	\$251,738.50		
Supervision of Public Hunting				
and Fishing Grounds (100)	2620-0200	15,050.00		
Hunter Safety Training (100)	2620-0300	45,745.00		
Office of Commissioner (.4)	2600-0100	2,477.20	315,010.70	10.9

SECRETARY, ENVIRONMENTAL AFFAIRS

(.2) 2000-0200		3,089.82		1
(.2) 0612-1000		76,000.00		3
GROUP INSURANCE		60,078.84		2
INTEREST ON BONDED DEBT (100)	0699-2800	100,900.00		4
SERIAL BONDS AND NOTES (100)	0699-2900	250,000.00		8

\$2,937,325.19 100

* Continuing Appropriation

** 60 percent reimbursable Federal Funds

*** 75 percent reimbursable Federal Funds

**** 100 percent reimbursable Federal Funds

APPROPRIATIONS AND EXPENDITURES

Account No. and Title	Appropriation	Reserve	Total Expenditures and (including Liabilities Reserve)	Continuing Appropriations	Reserve	Expenditures	Balance (excluding Reserve)
2670-0001 Administration	\$ 249,150.00	\$ 8,902.00	\$ 228,606.97	\$ 20,543.03			
2670-2300 Fisheries Management	719,710.00	37,255.00	668,189.93	51,520.07			
2670-2302 Repl. Hatch House, Sunderland	50,000.00		49,942.72	57.28			
2670-2303 Pollution Abatement, McLaughlin Hatchery	15,000.00			15,000.00			
2670-2305 Repl. Upper Pools, Sandwich	65,000.00		64,927.00	73.00			
2670-2322 Anadromous Fish Projects **	22,000.00	1,100.00	20,711.00	1,289.00			
2670-2342 Fish Restoration Projects ***	70,730.00	5,218.00	65,241.41	5,488.59			
2670-2401 Wildlife Management	602,825.00	24,683.00	576,163.31	26,661.69			
2670-2461 Wildlife Restoration Projects ***	241,100.00	14,625.00	225,501.24	15,598.76			
2670-2463 Construction of Storage Bldg., Newbury Mgmt. Area	12,200.00		12,178.00	22.00			
2670-2502 Eastern Dove Management ****	3,500.00	875.00	2,625.00				
	\$2,051,215.00	\$92,658.00	\$1,914,066.58	\$137,128.42			
2670-2451 Damage by Wild Deer & Moose	\$ 14,715.74	\$185.00	\$ 8,438.25	\$ 6,092.49			
2670-9013 Land Acquisition & Development	408,999.74		185,289.70	223,710.04			
2670-9016 Coastal & Inland Wetlands	5,000,000.00		12,123.80	4,987,876.20			
2670-9021 Pollution Abatement, McLaughlin Hatchery	92,900.00			92,900.00			
2670-9022 Fish Screens, Quabbin Reservoir	110,000.00			110,000.00			
2670-9023 Fish Rearing Facilities, McLaughlin & Palmer Hatcheries	47,100.00			47,100.00			
	\$5,673,715.48	\$185.00	\$205,851.75	\$5,467,678.73			

** 60 percent reimbursable Federal Funds

*** 75 percent reimbursable Federal Funds

**** 100 percent reimbursable Federal Funds

Freshwater Fish Records 1973

Species	Weight	Length	Girth	Place Caught	How Caught	Date	Caught by
L.M. Bass	10 lb. 15 oz.	23"	18 1/2"	Norwich Lk., Huntington	bait casting	10-13-73	Lawrence LaCresse, 47 Stonina Dr., Chicopee
S.M. Bass	5 lb. 7 oz.	21"	16 5/8"	Quabbin Res.	bait casting	9-15-73	Henry Penny, 58 Jennings St., Worcester
N. Pike	25 lb.	45"	22"	Onota Lk., Pittsfield	live bait	2-5-73	Ralph Fiegel, Yokum Rd., Richmond
Pickrel	7 lb.	25"	10 1/2"	Rohunta Lk., Orange	spinning	9-3-73	Joan I. Monahan, 45 Pratt Ave., Lowell
R. Trout	6 lb. 1/4 oz.	26"	13"	Jamaica Pd., Jamaica Plain	bait casting	9-2-73	Frank Keegan, 14 St. John St., Jamaica Plain
B. Trout	8 lb. 14 oz.	28"	17 1/2"	Spectacle Pd., Sandwich	spinning	7-22-73	John J. Pickrell, 8 Price St., Quincy
L. Trout	17 lb. 13 oz.	34 1/8"	21 3/4"	Quabbin Res.	live bait	5-20-73	Paul J. Drenzek, 2 Cherry St., Ware
Shad	7 lb. 12 oz.	28"	17"	Indian Head R.	fly fishing	5-4-73	Jerry Grozioso, 81 Whiton Ave., Quincy
Salmon	8 lb. 10 1/2 oz.	31 3/4"	14 1/2"	Quabbin Res.	fly fishing	4-17-73	John P. Yurkinas, 167 Vernon St., Worcester
Catfish	11 lb. 5 oz.	27"	12"	Metacomet Pd. Belchertown	trotting	6-1-73	Mike Owen, 13 Emerson Ct., Amherst
Walleye	11 lb.	29 3/4"	17 1/2"	Quabbin Res.	spinning	6-11-73	Bbb Methot, Pinebrook, Belchertown
Bluegill		12"	13 1/4"	Red Brook Pd.		73	Robert Silva, 61 Scraggy Neck Rd., Cataumet
		12"				73	Ernest Horn, 93 Turnpike Rd., Westboro
		12"				73	Clifford Razee, 42 Pleasant St., Chertley
Bullhead	3 lb. 8 oz.	19"	12"	Pembroke Res., Pembroke	live bait	5-28-73	Ron Smith, 99 Gladstone, Brockton
		19"	9 1/4"	Mashpee Pd., Mashpee	bait casting	10-8-73	Edmund B. Meslin, Anson Brown Rd., Johnston,
W. Perch	1 lb. 4 oz.	15 1/2"	11 1/2"	Davol Pd., Westport	bait casting	7-5-73	James Kasper, 171 Plymouth St., Bridgewater
Y. Perch	2 lb.	16 1/2"	9"	Flax Pd., Yarmouth	bait casting	8-73	Mark Kline, 93 Brandies Rd., Newton
Brook Trout	2 lb. 13 oz.	18"	12"	Rumford R., Foxboro	spinning	4-28-73	Donald J. Sapienzo, 272 Central, Foxboro
Calico	3 lb.	18"	14 3/4"	Ames Pd., Andover	ice tackle	1-23-73	William V. Twiraga, 60 Easton, Lawrence

STANDING ALL-TIME MASSACHUSETTS FRESHWATER FISHING RECORDS Through December 31, 1973

Species	Weight	Length	Girth	Place caught	How caught	Date	Caught by
L.M. Bass	12 lb. 1 oz.	25 3/4"	21 3/4"	Palmer R., Palmer	bait casting	5-9-63	George Pastick, Fall River
S.M. Bass	7 lb.	22 1/2"	14 1/2"	Lovells Pd., Barnstable		8-20-72	Marshall C. Hunter, Marion
N. Pike	25 lb.	45"	22"	Onota Lk., Pittsfield	live bait	2-5-73	Ralph Fiegel, Richmond
Pickrel	9 lb. 5 oz.	29 1/2"		Pontoosuc Lk., Lanesboro		1954	Mrs. James Martin, Stockbridge
R. Trout	8 lb. 4 oz.	26"	16"	Deep Pd., Falmouth	live bait	10-15-66	Roger Walker, Eastondale
B. Trout	19 lb. 10 oz.	31 1/2"	22 5/8"	Wachusett Res., Boylston	spinning	5-19-66	Dana DeBlois, Sterling
L. Trout	17 lb. 13 oz.	34 1/2"	21 3/4"	Quabbin Res.	live bait	5-20-73	Paul J. Drenzek, Ware
Shad	8 lb. 8 oz.	28"		North R., Hanover	spinning	5-6-71	Richard C. Brown, Norwell
Salmon	9 lb. 5 oz.	27.1"		Quabbin Res.		9-5-71	John E. Courtney, Auburn
Catfish	13 lb. 14 oz.	29.6"		Metacomet Pd., Belchertown		9-15-71	Wayne Briggs, Belchertown
Walleye	11 lb.	29 3/4"	17 1/2"	Quabbin Res.	spinning	6-11-73	Bbb Methot, Belchertown
Bluegill		12"				1973	Robert Silva, Cataumet
		12"				1973	Ernest Horn, Westboro
		12"				1973	Clifford Razee, Chertley
Bullhead	5 lb. 9 oz.	22 1/2"	11 1/2"	Conn. R., Hadley	live bait	6-8-63	Mrs. Erna Storie, Chicopee Falls
	5 lb. 8 oz.	22 1/2"	14"	Leverett Pd., Leverett	live bait	8-2-65	Stephen Brozo, Amherst
	4 lb. 9 oz.	22 1/2"	11 1/2"	Conn. R., Chicopee	live bait	9-8-65	Joseph Kida, Chicopee
W. Perch	2 lb. 12 oz.	17"	12"	Herring Pd., Plymouth	trotting	5-21-71	Manual P. Souza, Dartmouth
Y. Perch	2 lb. 5 oz.	17 3/4"		Wachusett Res., Boylston	spinning	4-23-70	Arnold Kopenblum, Marlboro
Brook Trout	6 lb. 4 oz.	24"		Otis Res., Otis	spinning	6-24-68	Thomas Laptew, Granville
Calico	2 lb. 9 1/2 oz.	18"	14"	Merrimac R., Lowell	spinning	6-8-65	George Olsson, Lowell
	2 lb. 9 oz.	18"	13 1/2"	Savorys Pd., Manomet	ice tackle	1-24-71	Charles Godin, Manomet
	3 lb.	18"	14 3/4"	Ames Pd., Andover	ice tackle	1-23-73	William V. Twiraga, Lawrence

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